

## Order of Papers:

- Scientific Method Practice
  - Scientific Method with SpongeBob
  - Unit 1A Study Guide (2 sheets)
- Due FRIDAY!

## Nature of Science (Scientific Method):

1. Goal of Science → understand the world in which we live
2. Scientists hypothesize to try and explain what they think will happen in a certain situation.
  - 2a. Long-held assumptions should be questioned
3. Question everything, but make your questions meaningful

"The quality of your answers is determined by the quality of your questions."  
- Jim Collins

  - 3a. You must be able to create an Experiment based on the question

- Scientific Inquiry:

1. Observe and create a question

2. Ask more questions and research

3. Form a hypothesis

- 3a. Hypothesis = educated guess

BASED ON RESEARCH

4. Test the hypothesis (perform the experiment)

- Within the Experiment:
  - a. Independent Variable → factor that you change on purpose
    - i) Example: Fertilizer on plants
    - ii) There can only be ONE independent variable
  - b. Dependent variable is the factor(s) that changes when you change the independent variable
    - i) Example: Plant growth
  - c. Constants are factors (variables) that you try to keep the same
    - i) Examples: water amount  
light amount
  - d. Control group is group that receives no treatment (change in the independent variable)
    - i) Example: Plant gets no fertilizer
  - e. Experimental group(s) <sup>(are)</sup> is ones that get treatment (change the independent variable)
    - i) Example: Plants that received fertilizer
  - f. Scientists ALWAYS confirm results
    - i) Repeated trials increases your confidence in your results
    - ii) Average the results to reduce random error